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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KOJI MISHIMA,
HIROYASU INOUE, TSUYSHI KOMAKI,
DAISUKE YOSHITOKU, HITOSHI ARAI,
KENJI YAMAGA, and HIRONORI KAKIUCHI

Appeal 2009-006294
Application 10/748,979
Technology Center 1700

Before TERRY J. OWENS, PETER F. KRATZ, and MARK NAGUMO,
Administrative Patent Judges.

OWENS, *Administrative Patent Judge.*

DECISION ON APPEAL¹
STATEMENT OF THE CASE

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 17-27, 29 and 31, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

The Invention

The Appellants claim an optical recording medium. Claim 17 is illustrative:

17. An optical recording medium comprising a substrate, a light transmission layer, and a plurality of recording layers laminated via at least intermediate layers and disposed between the light transmission layer and the substrate, the recording layers constituted so that a laser beam is projected onto the plurality of recording layers via the light transmission layer, at least one of the recording layers other than a recording layer farthest from the light transmission layer among the plurality of recording layers containing at least one element M selected from a group consisting of Ni, Cu, Si, Ti, Ge, Zr, Nb, Mo, In, Sn, W, Pb, Bi, Zn and La, at least one element selected from a group consisting of S, O, C and N as a primary component, and at least one metal different from the element M and selected from a group consisting of Mg, Al and Ti,

wherein the at least one recording layers contains the elements selected from a group consisting of S, O, C and N and the at least one metal different from the element M and selected from the group consisting of Mg, Al and Ti in a form of a compound thereof, and

wherein the at least one recording layers is constituted so that information is recorded therein upon being irradiated with the laser beam.

The References

Osada	JP 54-133134	Oct. 16, 1979
Takahashi	4,405,706	Sep. 20, 1983
Takaoka	4,682,321	Jul. 21, 1987
Nishida	5,871,881	Feb. 16, 1999
Suzuki	6,033,752	Mar. 7, 2000
Shuy	2001/0021160 A1	Sep. 13, 2001
Mizushima	JP 2003-054135	Feb. 26, 2003
Nee	2004/0018334 A1	Jan. 29, 2004
		(filed Apr. 8, 2003)

The Rejections

The claims stand rejected under 35 U.S.C. § 103 as follows:

1) claims 17-25, and 31 over Suzuki in view of Takahashi and Osada;
2) claims 17-27, and 31 over Suzuki in view of Takahashi, Osada, Nee, Nishida and either Takaoka or Mizushima; and 3) claims 17-27, 29, and 31 over Suzuki in view of Takahashi, Osada, Nee, Nishida, either Takaoka or Mizushima, and Shuy.²

OPINION

We reverse the rejections.

Issue

Have the Appellants indicated reversible error in the Examiner's determination that the applied prior art would have rendered prima facie obvious, to one of ordinary skill in the art, an optical recording medium comprising a light transmission layer through which a laser beam can be projected onto a plurality of recording layers, at least one of which comprises the Appellants' recited materials, so as to record information on at least one recording layer other than the recording layer farthest from the light transmission layer?

² A provisional obviousness-type double patenting rejection of claims 17-29 and 31 over claims 1, 5, 9, 13, 17 and 18 of Application No. 10/956010 (2005/0118530) in view of Takaoka is moot because that application has been abandoned. Rejections of claims 17-29, and 31 under 35 U.S.C. § 112, first paragraph, written description requirement, and second paragraph are withdrawn in the Examiner's Answer (Ans. 3).

Rejection over Suzuki in view of Takahashi and Osada

Findings of Fact

Suzuki discloses a double-sided optical recording medium, each side of which includes first and second recording layers (3, 4) which, upon exposure to a recording light beam irradiated through a transparent substrate (2), “form an alloy (a solid solution, eutectic mixture or a compound)” (col. 4, ll. 45-46; col. 7, ll. 36-42; col. 9, ll. 31-38; col. 11, ll. 27-35). “[A] thin intermediate layer can also be provided between the first recording layer 3 and the second recording layer 4 for regulating the speed at which the alloy incorporating the first recording layer 3 and the second recording layer 4 forms” (col. 9, ll. 49-53; col. 10, ll. 23-43). It is undisputed that Suzuki discloses first and second recording layer (3, 4) materials falling within the scope of the Appellants’ claims (col. 6, l. 1 – col. 7, l. 35).

Takahashi discloses an optical recording medium comprising listed metals used in a heat mode recording layer (col. 3, ll. 52-58).

Osada discloses an optical recording medium having recording layers comprising metallic oxides and oxidizing agents (p. 6).

Analysis

The Appellants and the Examiner consider Suzuki’s first and second recording layers (3, 4) to be recording bilayers which form a single recording layer (Ans. 4; Br. 7). Based upon that interpretation of Suzuki, which we adopt, each of the two sides of Suzuki’s double-sided recording medium, which are bonded together by an adhesive (8) (col. 9, ll. 35-39; Fig. 4), has one recording layer.

The Examiner argues that Suzuki discloses recording layers that are thin and that Suzuki's adhesive (8) would not absorb light at the recording wavelength (Ans. 11). Thus, the Examiner argues, light projected through the transparent substrate (2) on one side of Suzuki's double-sided optical recording medium can be projected onto the recording layers on both of its sides. *See id.*

The Appellants argue that "[w]hile [Suzuki's] double sided recording medium includes multiple recording bi-layers, these bi-layers are not constituted so that a laser beam may be projected onto them via a single light transmission layer" (Br. 7).

The Appellants have challenged the Examiner's assertion that light can be projected onto the recording layers on both sides of Suzuki's double-sided optical recording medium through the transparent substrate (2) on one of its sides (Ans. 11). Thus, to show obviousness the Examiner must provide evidence in support of that assertion. The Examiner, however, has not done so.³

*Rejections over Suzuki in view of Takahashi, Osada, Nee, Nishida
and either Takaoka or Mizushima, and over Suzuki
in view of Takahashi, Osada, Nee, Nishida, either
Takaoka or Mizushima, and Shuy*

Findings of Fact

Mizushima discloses an optical recording medium comprising, in order, a support substrate (20), a reflective layer (5), a first recording layer (DL-1) comprising two recording sublayers (41, 42), a transparent

³ The Examiner does not rely upon Takahashi or Osada for any disclosure that remedies this deficiency in the Examiner's argument regarding Suzuki (Ans. 5-6).

intermediate layer (TL), a second recording layer (DL-2) comprising two recording sublayers (41, 42), and a transparent substrate (2) through which a laser beam can pass to project recording light onto both recording layers (¶¶ 103-108; Fig. 7). One recording sublayer comprises mainly aluminum and the other comprises mainly antimony (¶ 0020). Upon exposure to the laser beam the aluminum and antimony bond and may form the intermetallic compound AlSb (¶ 0021). Certain other elements can be added to both layers (¶ 0029).

Shuy discloses an optical recording medium comprising two layers (transparent layer 30 and reflecting layer 40) each of which contains one or more elements, some of which are recited in the Appellants' claims, which, upon exposure to a recording light beam, react with the one or more elements in the other layer to form a compound or alloy (¶ 0026-0028; Figs. 2A, 2B).

Similarly to Suzuki, Takaoka discloses a double sided optical recording medium comprising a recording layer (12) on each side of a bonding agent (21) (col. 4, ll. 60-65; Fig. 10).

Nee discloses an optical recording medium comprising first (315) and second (319) data pit patterns (¶ 0046; Fig. 4).

Nishida discloses an optical recording medium comprising multiple (17, 19, 21) ultraviolet cured resin layers where information is stored as optical embossed pits by photo polymerization (col. 12, l. 66 – col. 13, l. 42).

Analysis

The Examiner has the initial burden of establishing a prima facie case of obviousness. *See In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984); *In re Rinehart*, 531 F.2d 1048, 1051 (CCPA 1976).

The Appellants have argued that the Examiner has not explained how Takaoka, Mizushima, Nee, Nishida and Shuy remedy the deficiency in Suzuki, Takahashi and Osada with respect to the structure and materials required by their sole independent claim 17 (Br. 9), and we do not find such an explanation in the Examiner's Answer. The Examiner argues that the additional references would have suggested adding more layers to Suzuki's optical recording medium (Ans. 8), but the Examiner does not explain how such a modification would have led to the Appellants' structure. The Examiner points out that Mizushima discloses recording layers DL-1 and DL-2 which are both accessible from the same light transmission layer (Ans. 13), but the Examiner does not explain how that disclosure in combination with the disclosures of Takaoka, Nee, Nishida, Shuy and the initially-relied-upon Suzuki, Takahashi and Osada references would have led one of ordinary skill in the art to the Appellants' combination of optical recording material structure and materials.

Establishing a prima facie case of obviousness of an invention comprising a combination of known elements requires "an apparent reason to combine the known elements in the fashion claimed." *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). The Examiner has not provided the required apparent reason.

Conclusion of Law

The Appellants have indicated reversible error in the Examiner's determination that the applied prior art would have rendered prima facie obvious, to one of ordinary skill in the art, an optical recording medium comprising a light transmission layer through which a laser beam can be projected onto a plurality of recording layers, at least one of which comprises the Appellants' recited materials, so as to record information on at least one recording layer other than the recording layer farthest from the light transmission layer.

DECISION/ORDER

The rejections under 35 U.S.C. § 103 of claims 17-25, and 31 over Suzuki in view of Takahashi and Osada, claims 17-27, and 31 over Suzuki in view of Takahashi, Osada, Nee, Nishida and either Takaoka or Mizushima, and claims 17-27, 29, and 31 over Suzuki in view of Takahashi, Osada, Nee, Nishida, either Takaoka or Mizushima, and Shuy are reversed.

It is ordered that the Examiner's decision is reversed.

REVERSED

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